

SEVERE LOCAL STORMS, JULY 1942

(Compiled by Mary O. Souder)

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Laurens County, S. C.	1	P. m.			\$5, 150	Electrical	2 barns including livestock and feed burned.
Russell, Kans., 4 miles south.	2	7 p. m.	1		10, 000	Hail	Chief loss in unharvested wheat; path 4 miles long.
Menno, S. Dak., and vicinity.	2	8:30-8:40 p. m.			30, 000	Heavy hail	50 to 100 percent loss in grains and gardens; some corn badly stripped; path narrow.
Carroll, Audubon, Guthrie, Adair, Madison, Clarke, and Union Counties, Iowa.	2-3	10:30 p. m.-2 a. m.	17		40 000	Hail, rain, and flood.	Property damage, \$4,000; loss in crops, \$36,000.
Richland County, Mont.	4	5-7 p. m.	12		5, 000	Hail	Loss in crops; path 10 miles long.
Luverne, Iowa.	5	7 p. m.			1, 500	do.	Path 2 miles long.
Tama County, Iowa.	5	8:30 p. m.			6, 000	do.	Property damaged.
Davenport, Iowa, and vicinity.	5	10:45 p. m.		0	50, 000	Tornado and hail	Loss in crops; property damaged.
Hutchins, Goodel, and Belmond, Iowa.	5		880	0	50, 000	do.	Property damage and loss in crops.
Plainview, Tex., vicinity of.	6	8:45 p. m.	1		15, 000	Heavy hail	Loss in cotton, vegetables, and feed crops.
Broadheads, Pa., and vicinity.	6	P. m.			15, 000	Wind and hail	Trees blown down; utilities disrupted; other property damaged.
Wilkes-Barre, Pa., and vicinity.	6	do.			350, 000	Hail, wind, and rain.	Much crop loss and property damage.
Hewittville, N. Y.	6				1, 000	Electrical	Lighting struck a hydroelectric station with damage to generators.
Richfield, N. Y.	6				2, 000	do.	Barn burned.
Daniels and Sheridan Counties, Mont.	7	4 p. m.	880		2, 000	Hail	Loss in crops.
Sheridan and Roosevelt Counties, Iowa.	7	6-7 p. m.	15		150, 000	Heavy hail	Storm occurred north and east of Froid in the Medicine Lake area, moving into Williams County, N. Dak. Crop loss, \$150,000; considerable property damaged; path 15 miles long.
Sheridan County, Mont.	8	3-4:30 p. m.	16		850, 000	do.	Principal loss in wheat, flax, and small grains. Crop loss, \$850,000; property damage considerable but not estimated. Path 30 miles long.
Geraldine, Mont., vicinity of.	8	3:30 p. m.	14		5, 000	Hail	Loss in wheat and grass; path 8 miles long.
Dillon County, S. C.	8	5 p. m.			5, 000	do.	Loss in cotton and tobacco.
Dillon, S. C.	8	5:15 p. m.			1, 000	Thundersquall	Roof and awnings damaged.
Carlyle, Mont.	8	9 p. m.	14		75, 000	Heavy hail	Principal loss in grain; path 6 miles long.
Columbia, S. C.	8				20, 000	Thundersquall	15 small aircraft on municipal airport field damaged or destroyed and barn blown down.
Pound, Va.	8				151, 000	Rain and flood	Damage to bridges, \$5,000; crop loss \$46,000; loss in livestock and damage to buildings, \$100,000.
Dumas, Tex., vicinity of.	9-10		2, 640		20, 000	Heavy hail	Loss principally in wheat; path 20 miles long.
Idaho County, Idaho	10	6 p. m.	14			do.	30 to 40 percent loss in grains and gardens, not estimated; path 20 miles long.
Princeton and Isanti, Minn., and vicinities.	12	5:45 p. m.	11		120, 000	Thundersqualls	Property damaged, \$109,000; crop loss, \$11,000. Storm moved from northwest to southeast over a path about 20 miles long.
Lyon County, Iowa.	14	2:45 p. m.	11		15, 000	Hail	Loss in crops; path 18 miles long.
Marlboro County, S. C.	14	7 p. m.			5, 000	Electrical	Residence burned.
Albert Lea, Minn., and vicinity.	15	3:30 a. m.	12		56, 000	Hail	Storm moved from southwest to northeast over a path about 5 miles long; loss to growing crops, \$50,000; property damage, \$6,000.
Wadena, Minn.	15	4 a. m.	12		10, 000	do.	Storm moved from northwest to southeast over a path about 4½ miles long. Loss principally to growing crops; several windows broken in farmhouses about 9 miles northeast of Wadena.
Minneapolis, Minn.	15	5:20 a. m.			25, 000	Electrical	Shed and warehouse destroyed.
Blythe, Calif., vicinity of.	15	7 p. m.	2, 640			Straight-line wind	Storm moved north over a path at least 8 miles long. At a small airport, 14 miles west of Blythe, 26 light trainer planes were badly damaged and 1½ miles of high-tension power lines about 8 miles south-southeast of the airport.
New York State, southwestern portion.	17-18			5		Electrical, heavy rain, and flood.	The heavy rainfall in Cattaraugus and Allegany Counties and vicinities, caused floods in the Allegheny River Basin, especially in Olean, Porterville, and Salamanca. 4 persons drowned; thousands homeless; much property damage. 1 person killed by lightning at Lyndonville.
Hickok, Kans.	18	6:30 p. m.	440	0	150	Tornado	Garage, lumber shed, and a store damaged; path 4 miles long.
Calhoun County, Iowa.	18	8 p. m.	167	0	1, 000	do.	Rain accompanied the tornado; 3 farms damaged.
Elk, McKean, and Potter Counties, Pa.	18			12		Heavy rain, electrical.	Excessive rains caused rivers to rise resulting in floods causing millions of dollars damage. Bridge and highways washed out; railroads blocked by water slides; thousands homeless, area cut off; some loss due to fires.
LaMesa, N. Mex.	20	P. m.			30, 000	Hail	Loss in crops.
Honea Path, S. C.	22	5 p. m.	12½		25, 000	Tornadic wind	Property damaged; path 4 miles long.
Haygood, S. C.	22				2, 000	Electrical	Gin house and 2 gins destroyed by fire.
Roswell, N. Mex.	24	2:38-2:45 p. m.	12		32, 000	Hail	Cotton complete loss with leaves and bolls knocked off.
Teton County, Mont.	24	8:30 p. m.	12		100, 000	Hail and wind	Loss in crops; path 40 miles long.
Luverne, Minn., and vicinity.	24	P. m.			25, 000	Thunder storm and hail.	Loss in growing crops.
Sabetha, Kans., vicinity of.	24	do.	13		10, 000	Heavy hail	Loss mostly in crops.
Hokah County, Minn.	25	5 p. m.	12		10, 200	Thunder storm and hail.	Loss to growing crops, principally corn and small grain; path 3 miles long.
Winifred, Mont., vicinity of.	25	8:30 p. m.	12		50, 000	Heavy hail	Loss in crops; path 35 miles long.
Lancaster County, Pa.	26	P. m.		2	21, 500	Thunderstorm	Heavy rain caused flash floods; 2 persons drowned. Several fires caused damage to lightning.
Dallas County, Iowa.	27	3-4 p. m.			4, 200	Heavy rain and hail.	Crop loss, \$1,000; damage from flooding, \$3,200.
Philadelphia, Pa.	27				40, 000	Heavy rain	Streets flooded; traffic blocked; property damaged.
Waukau, Wis.	28	4 p. m.	440	0	10, 000	Tornado	Storm moved from west to east through the village; 1 person injured; many trees uprooted; property damaged; path 880 yards long.
Hancock, Wis., vicinity of.	28			0		do.	Damage to buildings; no details.
Heuvelton, N. Y., vicinity of.	28				10, 000	Electrical	Large barn with 100 tons of hay and some equipment burned.
Lycoming County, Pa.	28					do.	2 barns burned.
Hill County, Mont.	28-30	5-6 p. m.	14		400, 000	Severe hail	Loss in crops, about 20,000 acres, including scattered hailstorms in vicinity of Havre, July 29 and 30, total loss about 700,000 bushels grain. Property damage considerable, but not estimated.
Benson, Minn., and vicinity.	30	2-6 a. m.			5, 000	Heavy rain	Heavy to excessive rains caused much lodging of grain and corn and flooding of lowlands.
Black Hawk County, Iowa.	30	A. m.			90, 000	Heavy rain, electrical.	6 residences and a church damaged by fire; 10 county bridges washed out; streets damaged and basements flooded.
Luverne, Minn., and vicinity.	30	do.				Rain and flood	Heavy to excessive rains between the 25th to 30th resulted in high water in Rock River and Beaver Creek causing them to overflow. Highways, roads and lowlands inundated, about 2,790 feet of railroad track washed out, thousands of shocks of grain floated away and lowland were forced to move livestock to higher ground. Sewers overflowed and basements flooded and there was much damage from washing of crops and erosion.

Footnote at end of table.

SEVERE LOCAL STORMS, JULY 1942—Continued

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Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Chouteau County, Mont.	30	6-7 p. m.	15		1,500,000	Hail	Loss in wheat; path 60 miles long.
Custer County, Mont.	30	P. m.	11		25,000	do.	Loss in crops; path 10 miles long.
Teton County, Mont.	30		12½		100,000	do.	Loss in crops; path 40 miles long.
Wibaux County, Mont.	31	7-7:30 p. m.	16		200,000	do.	Loss in crops.
Fallon County, Mont.	31	8:30-9:30 p. m.	15		80,000	Heavy hail	Do.
Chouteau County, Mont.	31	P. m.	15		25,000	Hail	Loss in crops over a path 10 miles long.
Allen County, Ind.	31				5,000	Wind and hail	Trees and buildings damaged; some loss from flooding.

LATE REPORTS FOR JUNE 1942

Hinckley, Minn.	5	6 p. m.	15		10,000	Thunderstorm and hail	Crop loss, \$5,000; property damage, \$5,000.
Watts, Okla., vicinity of	12	11 a. m.			1,700	Wind	Large barn under construction destroyed and many trees blown down.
Anderson, S. C., and vicinity	13	3:45 p. m.			5,000	Thundersquall	Loss in unharvested wheat in the Mountain Creek area; 2 mules killed by falling timber when 2 barns blew down.
Manning, S. C.	13	P. m.			2,000	do.	Communication lines, trees, and outbuildings blown down.
Hoisington, Kans., and vicinity	18	do.			75,000	Hail and wind	Wind damage general and especially severe in Hoisington. Greater part of damage from hail. Loss in wheat 70 percent.
Blackwell, Okla., and vicinity	20-21	11:50 p. m.-12:30 a. m., C. S. T.	12		2,000	Hail and rain	Property damaged; loss in fruit not given in estimate.

¹ Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR JUNE AND JULY 1942

[Solar Radiation Investigations Section, I. F. HAND in charge]

SOLAR RADIATION OBSERVATIONS

Explanations of the tables, and references to descriptions of instruments, stations and methods of observation, and to summaries of data, are given in the January 1942 REVIEW, p. 20.

Beginning with this issue, total solar and sky radiation data from East Wareham, Mass., will appear in table 2 through a cooperative arrangement between the Weather Bureau and Dr. H. F. Bergman of the Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture. The pyrheliometric equipment, of which he has supervision, is used in research studies that include the photosynthesis which takes place in cranberry bushes beneath varying thicknesses and qualities of snow cover.

The coordinates of this station are as follows: Lat. 41°45'01" N., longitude, 70°40'08" W., altitude, 50 feet. East Wareham is near the neck of Cape Cod in the midst of an extensive cranberry bog section. Owing to its proximity to the ocean the immediate area is subject to considerable fog.

TABLE 1.—Solar radiation intensities during June 1942

[Gram-calories per minute per square centimeter of normal surface]

Madison, Wis.												
Date	Sun's zenith distance										1:30 p. m.	
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		
	75th mer. time	Air Mass										Local mean solar time
		A. M.				P. M.						
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
June 8.....	8. 81				0.84	1. 35					10. 21	
June 12.....	14. 60	0. 65	0. 74	0. 90	1. 03						14. 10	
June 16.....	7. 87			. 69	1. 01	1. 35					9. 47	
June 21.....	12. 24	. 71	. 83	. 98	1. 15	1. 36					9. 14	
June 24.....	9. 47	. 74	. 86	. 99	1. 15	1. 34					8. 48	
June 30.....	14. 10	. 76	. 84	. 98	1. 13	1. 32					12. 08	
Means.....		. 72	. 82	. 91	1. 05	1. 34						
Departures.....		+. 04	0	-. 04	0	+. 01						
Lincoln, Nebr.												
June 13.....	7. 87					1. 39	1. 17				6. 50	
June 23.....	9. 83					1. 35					10. 97	
Means.....						(1. 37)	(1. 17)					
Departures.....						(+. 01)	(+. 07)					

TABLE 1.—Solar radiation intensities during June 1942—Continued

[Gram-calories per minute per square centimeter of normal surface]

Albuquerque, N. Mex.												
Date	Sun's zenith distance										Local mean solar time	
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		1:30 p. m.
	75th mer. time	Air Mass										
	A. M.					P. M.						
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0		e.
June 1	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
June 5	7.45	0.92	1.01	1.14	1.25	1.49	1.30	1.14	0.99	0.92	7.87	
June 6	7.04	.88	0.94	1.07	1.22	1.44	1.30	1.10			5.16	
June 7	4.75	.90	.99	1.11	1.26		1.27	1.13	.95	.89	4.17	
June 8	7.87			1.00	1.18	1.42					7.04	
June 9	7.87				1.18		1.20				7.29	
June 11	3.30	.89	.96	1.09	1.24	1.45					4.57	
June 12	4.57				1.50						4.95	
June 13	3.45	.97	1.06	1.18	1.32	1.50	1.32	1.19	1.07	1.01	4.17	
June 16	6.02				1.44	1.17					7.87	
June 18	3.63				1.44						4.75	
June 19	4.75						1.16	1.02	.96		6.50	
June 20	4.57	.95	1.04	1.15	1.31	1.51	1.30	1.15			5.16	
June 21	3.00		1.11	1.19	1.35	1.52	1.31	1.20	1.06	1.00	4.17	
June 22	3.15	1.00	1.08	1.19	1.33	1.50	1.29				4.57	
June 23	4.75		1.01	1.08		1.37	1.10	0.91			10.57	
June 24	10.97		.75	0.90	1.11	1.35	1.08		.77	.68	7.04	
June 25	7.57		.95	1.05	1.19	1.44					3.63	
June 26	3.81	.96	1.02	1.16	1.27						4.95	
June 27	4.57	.89	.97	1.10	1.27	1.45					4.57	
June 28	3.81		.96	1.08	1.20	1.43	1.20	1.03	.90	.83	4.57	
June 29	3.15		1.06	1.18	1.32	1.51	1.29	1.16	1.02	.95	3.45	
June 30	2.26	.92	.99	1.11	1.27		1.31	1.13			3.45	
Means		.93	.99	1.10	1.25	1.46	1.25	1.12	.97	.90		
Departures		+.03	+.01	+.02	+.02	+.01	+.01	+.02	0	-.01		

Blue Hill, Mass.											
June 5	16.3							0.84	0.66	0.55	13.1
June 6	16.3	0.81	0.84					.64			15.7
June 8	19.5					1.24	0.93	.68	.53	.40	15.7
June 9	14.6	.57	.63				.62	.41	.27	.18	13.6
June 10	11.3					1.13	.97				18.7
June 12	24.0				1.01						25.6
June 18	11.3						1.02	.79	.63	.27	14.1
June 19	12.3				.85		.84	.56	.39	.27	14.6
June 20	18.8				.93		.85	.57	.37	.28	16.3
June 24	13.1					1.36	1.08	.81	.63	.49	13.1
June 25	12.6						1.02	.85	.65	.56	14.1
June 26	14.1	.82	.91	1.01	1.15						14.1
June 27	15.7					1.07	.63				17.5
June 30	18.8						.81				17.5
Means		.73	.79	(1.01)	.99	1.20	.88	.67	.52	.39	
Departures		+.05	0	(+.07)	-.06	-.10	-.16	-.19	-.10	-.06	

*Extrapolated.